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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/606,418

06/26/2003

Tadao Endo

03500.011909.1

5676

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7590

03/17/2008

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EXAMINER

NGUYEN, LUONG TRUNG

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

03/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/606,418	Applicant(s) ENDO ET AL.	
	Examiner LUONG T. NGUYEN	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2007 and 26 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 73-81 is/are pending in the application.
- 4a) Of the above claim(s) 74 and 77-81 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 73 and 76 is/are rejected.
- 7) ☒ Claim(s) 75 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/29/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/29/2007 has been entered.

Election/Restrictions

2. Applicant's election of Species IV, Figures 10-11 directed to claims 73, 75, 76 in the reply filed on 12/26/2007 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claims 74, 77-81 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/26/2007.

Response to Arguments

4. Applicant's arguments with respect to new claims 73 and 76 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 73, 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamasaki (US 5,274,459) in view of Miyake (US 5,198,905) further in view of Olmstead (US 5,770,847) and Spivey et al. (US 5,528,043) and Mizokami (US 4,498,753).

Regarding claim 73, Hamasaki discloses a radiation image pickup apparatus comprising:
a photoelectric conversion circuit section (see figure 1), having a pixel group comprising a plurality of pixels each including a photoelectric conversion element and a switching element (figure 1, column 2, lines 50-62), a plurality of signal wires (vertical signal lines 2, figure 1, column 2, lines 50-62) in order to output parallel signals from the pixel group;

a first switch connected to the signal wires to reset the signal wires (disclosed as transistor 10, figure 1, column 3, lines 5-20);

a reading circuit section for converting the parallel signals transferred through said signal wires to serial signals to output the serial signals (disclosed as combination of transistor 10, buffer amplifier 14, switches 15a, 15 b, buffer amplifier 16, switch 17, and horizontal scanning circuit 19, figure 1), wherein

the reading circuit section has at least one analog operational amplifier (disclosed as buffer amplifier 14, figure 1 column 3, lines 20-38) connected to each signal wire, a third switch (disclosed as switches 15a, 15b, figure 1, column 3, lines 20-38) for sampling the parallel signal

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amplified by the analog operational amplifier and outputted through the first capacitor element, a second capacitor element (disclosed as capacitors C1, C2, figure 1, column 3, lines 20-38) for holding the parallel signal transferred through the third switch, and a fourth switch (disclosed as switch 17, figure 1, column 3, lines 20-38) for reading the parallel signal from the second capacitor element as the serial signal sequentially.

Hamasaki fails to specifically disclose a photoelectric conversion element and a switching element of an amorphous semiconductor, and a plurality of signal wires are arranged over an insulating substrate. However, Miyake teaches a substrate 21 made of glass (figure 4, column 5, line 11); and photodetecting elements 11" has a structure including an amorphous silicon layer (figures 2 and 3, column 5, lines 5-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Hamasaki by the teaching of Miyake in order to provide an image sensor which minimizes the electrical interference among the signal lines and hence can exactly output charges from signal lines (column 3, lines 37-41).

Hamasaki and Miyake fail to disclose a first capacitor element being connected in series to an output of the analog operational amplifier for passing through only alternating component, and a second switch for DC restoration of the first capacitor element. However, Olmstead teaches a DC restoration circuit 239, which includes a capacitor 242 and a switch 243. The signal 240 from CCD chip 204 is buffered by an amplifier 241 and then output to DC restoration circuit 239 for DC restoration (figure 8A, column 9, lines 5-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the

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system in Hamasaki and Miyake by the teaching of Olmstead in order to reduce kTC noise (column 8, lines 45-55, column 9, lines 50-54).

Hamasaki, Miyake and Olmstead fail to disclose a wavelength converter for converting a radiation into light which can be sensed by the photoelectric conversion element. However, Spivey et al. discloses an X-ray image sensor, which use a fluorescing plate that converts each x-ray photon into a large number of visible light photons to produce visible light image, the visible light image is then imaged onto an optical image sensor such as CCD (column 1, lines 25-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Hamasaki, Miyake and Olmstead by the teaching of Spivey in order to provide an imaging system for producing images from electromagnetic radiation such as x-ray.

Hamasaki, Miyake, Olmstead and Spivey fail to disclose wherein the analog operational amplifier includes a function for reducing its power consumption based on an external signal. However, Mizokami discloses wherein the analog operational amplifier includes a function for reducing its power consumption based on an external signal (column 2, lines 40-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system in Hamasaki, Miyake, Olmstead and Spivey by the teaching of Mizokami to obtain a camera, which has high power saving effect and a quick response in photometric outputs (column 2, lines 54-55).

Regarding claim 76, Hamasaki discloses amplifier 14 (figure 1, column 3, lines 20-38) as an analog operational amplifier, which inherently include a controllable amplification amplifier.

Allowable Subject Matter

7. Claim 75 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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